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10/521,618	01/14/2005	Kaoru Someya	05014/LH	2629

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FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 Fifth Avenue
16TH Floor
NEW YORK, NY 10001-7708

EXAMINER	
CHAN, RICHARD	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/521,618	Applicant(s) SOMEYA, KAORU	
	Examiner Richard Chan	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/14/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bazarjani (US 6,005,506).

With respect to claim 1, Bazarjani discloses the radio wave reception device Fig.2 comprising: a radio wave reception means 2212 which receives a radio wave signal, converts the received radio wave signal into an electric signal, and outputs the electric signal; an oscillation means 2222 which outputs a signal having a single frequency; a frequency conversion means 2220 which synthesizes the electric signal output from said radio wave reception means 2212 with the signal output from said oscillation means 2222, and outputs an intermediate frequency signal, from mixer 2220; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2220, wherein said frequency conversion means 2220 synthesizes one of signals having different frequencies which are received by said radio wave reception means 2212 with the signal having the single frequency output from said oscillation means 2222, and outputs the intermediate frequency signal whose frequency is fixed. (Col.2 lines 2-14)

With respect to claim 6, Bazarjani discloses the radio wave clock comprising a radio wave reception device Fig.2, wherein said radio wave reception Fig.2 includes: a radio wave reception means 2212 which receives a radio wave signal containing time data, converts the received radio wave signal into an electric signal, and outputs the electric signal; an oscillation means 2222 which outputs a signal having a single frequency; a frequency conversion means 2220 which synthesizes the electric signal output from said radio wave reception means 2212 with the signal output from said oscillation means 2222 and outputs an intermediate frequency signal; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2220, wherein said frequency conversion means 2220 synthesizes one of signals having different frequencies which are received by said radio wave reception means 2212 with the signal having the single frequency output from said oscillation means 2222, and outputs the intermediate frequency signal whose frequency is fixed. (Col.2 lines 2-14)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 –5, 7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazarjani (US 6,005,506) in view of Smith (US 6,389,059).

With respect to claim 2, Bazarjani discloses the radio wave reception device according to claim 1, however Bazarjani does not specifically disclose wherein said oscillation means outputs a signal whose frequency is either an average of frequencies of a first radio wave and a second radio wave received by said radio wave reception means, or an average of difference between the frequencies of the first radio wave and the second radio wave.

The Smith reference however discloses wherein a frequency band Is being transmitted used both (f1 + f2) and (f1-f2) can be stepped down with a single local oscillator. (Col.15 line 45-57)

It would have been obvious to one or ordinary skill in the art to implement the teaching of taking the average of multiple received frequencies as disclosed by Smith with the radio wave reception device of Bazarjani in order to allow transmission or reception of either or both frequencies in a pair.

With respect to claim 3, Bazarjani discloses the radio wave reception device Fig.2comprising: a radio wave reception means 2212 which can receive a first radio wave and a second radio wave having different frequencies, and outputs an electric signal of the first radio wave or the second radio wave by converting the received first or

second radio wave into an electric signal with frequency conversion means 2220; an oscillation means 2222; a frequency conversion means 2220 which synthesizes the electric signal output from said radio wave reception means 2212 with the signal output from said oscillation means 2222, and outputs an intermediate frequency signal; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2220. (Col.2 lines 2-14)

However the Bazarjani does not specifically disclose wherein the local oscillation means outputs a signal whose frequency is either an average of the frequencies of the first radio wave and the second radio wave output from said radio wave reception means, or an average of difference between the frequencies of the first radio wave and the second radio wave.

The Smith reference however discloses wherein a frequency band Is being transmitted used both (f1 + f2) and (f1-f2) can be stepped down with a single local oscillator. (Col.15 line 45-57)

It would have been obvious to one or ordinary skill in the art to implement the teaching of taking the average of multiple received frequencies as disclosed by Smith with the radio wave reception device of Bazarjani in order to allow transmission or reception of either or both frequencies in a pair.

With respect to claim 4, Bazarjani discloses the radio wave reception device Fig.2 according to claim 3, wherein: said oscillation means 2222 and demodulates the

intermediate frequency signal, with detection means 2104 in accordance with a synchronous detection method using the received signal.

However Bazarjani does not specifically disclose wherein the oscillator means comprises the signal whose frequency is either the average of, or the average of difference between, the frequencies of the first radio wave and the second radio wave by multiplying or frequency-dividing this signal; and said detection means receives the signal output from said oscillation means before being multiplied or frequency-divided.

The Smith reference however discloses wherein the oscillator means comprises signals whose frequency is the average of sum and or difference of multiple frequencies, and wherein multiple frequencies are allowed to be transmitted and receiver. (Col.15 line 45-57)

It would have been obvious to one ordinary skill in the art to implement the oscillator means as disclosed by Smith with the radio wave reception device of Bazarjani in order for the system to be able to calculate the local oscillation signal for multiple incoming frequencies.

With respect to claim 5, Bazarjani and Smith combined discloses the radio wave reception device according to claim 3, Smith continues to disclose wherein: said oscillation means outputs the signal whose frequency is either the average of, or the average of difference between, the frequencies of the first radio wave and the second radio wave; and said detection means receives the signal output from said oscillation means after being multiplied or frequency-divided, (Col.15 lines 45-57) and Bazarjani

discloses wherein the radio wave reception device demodulates the intermediate frequency signal, with demodulator 2104 in accordance with a synchronous detection method using the received signal. (Col.2 line 5-14)

With respect to claim 7, Bazarjani discloses the radio wave clock comprising a radio wave reception device, Fig.2 wherein said radio wave reception Fig.2 includes: a radio wave reception means 2212 which can receive a first radio wave and a second radio wave each containing time data and having different frequencies from each other, and outputs an electric signal of the first radio wave or the second radio wave by converting the received first or second radio wave into an electric signal; a frequency conversion means 2120 which synthesizes the electric signal output from said radio wave reception means 2212 with the signal output from said oscillation means 2122, and outputs an intermediate frequency signal; and a radio wave reception means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2120 ; (Col.2 lines 2-14)

However the Bazarjani reference does not specifically disclose an oscillation means which outputs a signal whose frequency is either an average of the frequencies of the first radio wave and the second radio wave output from said radio wave reception means, or an average of difference between the frequencies of the first radio wave and the second radio wave;

The Smith reference however discloses wherein a frequency band Is being transmitted used both (f1 + f2) and (f1-f2) can be stepped down with a single local oscillator. (Col.15 line 45-57)

It would have been obvious to average the incoming multiple signals as disclosed by Smith with the

It would have been obvious to one or ordinary skill in the art to implement the teaching of taking the average of multiple received frequencies as disclosed by Smith with the radio wave reception device of Bazarjani in order to allow transmission or reception of either or both frequencies in a pair.

With respect to claim 11, Bazarjani discloses the radio wave reception device Fig.3 comprising: a radio wave reception means 2212 which can receive a plurality of radio waves having different frequencies, and outputs an electric signal of each of the plurality of radio waves by converting each received radio wave into an electric signal; a frequency conversion means 2220 which synthesizes the electric signal output from said radio wave reception means 2212 with a harmonic component of the signal output from said oscillation means 2222, and outputs the intermediate frequency signal; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2220.

However Bazarjani does not specifically disclose an oscillation means which outputs a signal having a frequency f0 which is obtained from an equation (.vertline.f1.+-.fi.vertl- ine./p1)= . . . =(.vertline.fn.+-.fi.vertline./pn)=f0 (where p1, . . . , pn are positive

integers) which defines a relationship between the respective frequencies (f1, . . . , fn (n is an integer equal to or greater than 2)) of the plurality of radio waves receivable by said radio wave reception means and an intermediate frequency fi;

The Smith reference however discloses wherein the oscillation signal is monitored in each frequency band, and the oscillation signal is calculated by taking the average of the incoming signals.

It would have been obvious to one of ordinary skill in the art to implement frequency-determining means based on the average of the multiple frequencies and take the value and implement the value to determine local oscillation frequency as disclosed by Smith with the combined radio reception device as disclosed by Bazarjani and Callaway.

5. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazarjani (US 6,005,506) in view of Callaway (US 6,370,365).

With respect to claim 8, Bazarjani discloses radio wave reception device comprising: a radio wave reception means Fig.2 which receives a radio wave signal, converts the received radio wave signal into an electric signal, and outputs the electric signal; an oscillation means 2134 which outputs a signal having a single frequency; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2128, wherein said frequency conversion means

2128 synthesizes one of signals having different frequencies which are received by said radio wave reception means 2212 with the signal output from said multiplying means 2134, and outputs the intermediate frequency signal whose frequency is fixed. (Col.2 lines 2-14)

The Bazarkani reference however does not specifically disclose a multiplying means which multiplies the signal output from said oscillation means; a frequency conversion means which synthesizes the electric signal output from said radio wave reception means with the signal output from said multiplying means, and outputs an intermediate frequency signal;

The Callaway reference however discloses in Fig.3 a divide by a N module 224 connected to the oscillation means 220 making up the integrated frequency conversion circuit, wherein in coming RF signal 206 is processed by filter 212 to mix, by mixer 218 with local oscillation signal 226.

It would have been obvious to one of ordinary skill in the art to implement a divide and multiplying module at the output of the local oscillation circuit for a frequency conversion circuit of Callaway in order to change the value of the local oscillation signal to mixed in with the incoming RF signal of Bazarjani.

With respect to claim 12, Bazarjani discloses the radio wave clock comprising a radio wave reception device Fig.3, wherein said radio wave reception includes: a radio wave reception means 2212 which receives a radio wave signal containing time data, converts the receives radio wave signal into an electric signal, and outputs this electric

signal and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means 2220; (Col.2 lines 2-14)

However Bazarjani does not specifically disclose wherein an oscillation means which outputs a signal having a single frequency; a multiplying means, which multiplies the signal output from said oscillation means; a frequency conversion means which synthesizes the electric signal output from said radio wave reception means with the signal output from said multiplying means, and outputs an intermediate frequency signal; wherein said frequency conversion means synthesizes one of signals having different frequencies which are received by said radio wave reception means with the signal output from said multiplying means, and outputs the intermediate frequency signal whose frequency is fixed.

The Callaway reference however discloses in Fig.3 a divide by a N module 224 connected to the oscillation means 220 making up the integrated frequency conversion circuit 208, wherein in coming RF signal 206 is processed by filter 212 to mix, by mixer 218 with local oscillation signal 226.

It would have been obvious to one of ordinary skill in the art to implement a divide and multiplying module at the output of the local oscillation circuit for a frequency conversion circuit of Callaway in order to change the value of the local oscillation signal to mixed in with the incoming RF signal of Bazarjani.

6. Claims 9, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazarjani (US 6,005,506) in view of Callaway (US 6,370,365) and in further view of Smith (US 6,389,059).

With respect to claim 9, Bazarjani and Callaway combined disclose the radio wave reception device according to claim 8, however neither reference specifically discloses wherein said oscillation means includes a frequency determining means which determines a frequency f0 which is obtained from an equation (.vertline.f1.+-.fi.vertline./p1)= . . . =(.vertline.fn.+-.fi.vertline./p- n)=f0 (where p1, . . . , pn are positive integers) which defines a relationship between frequencies (f1, . . . , fn (n is an integer equal to or greater than 2)) of a plurality of radio waves receivable by said radio wave reception means (1, 2) and the intermediate frequency fi, as the single frequency.

The Smith reference however discloses wherein the oscillation signal is monitored in each frequency band, and the oscillation signal is calculated by taking the average of the incoming signals.

It would have been obvious to one of ordinary skill in the art to implement frequency-determining means based on the average of the multiple frequencies and take the value and implement the value to determine local oscillation frequency as disclosed by Smith with the combined radio reception device as disclosed by Bazarjani and Callaway.

With respect to claim 10, Bazarjani, Callaway, and Smith combined disclose the radio wave reception device according to claim 9, Callaway continues to disclose further comprising a selection means which selects any one integer from among the positive integers p1 to pn, wherein said multiplying means 224 includes a frequency multiplying means which outputs the signal having the single frequency output from said oscillation means by multiplying this signal by the integer selected by said selection means. (Col.3 lines 20-26)

With respect to claim 13, Bazarjani discloses the radio wave clock comprising a radio wave reception device 2200, wherein said radio wave reception 2212 includes: a radio wave reception means 2212 which can receive a plurality of radio waves each containing time data and having different frequencies from each other, and outputs an electric signal of each of the plurality of radio waves by converting each received radio wave into an electric signal; and a detection means 2104 which demodulates the intermediate frequency signal output from said frequency conversion means.

However Bazarkani does not specifically disclose wherein an oscillation means which outputs a signal having a frequency f0 which is obtained from an equation (.vertline.f1.+-.fi.vertline./p1)= . . . =(.vertline.fn.+-.fi.vertline./pn)=f0 (where p1, . . . , pn are positive integers) which defines a relationship between the respective frequencies (f1, . . . , fn (n is an integer equal to or greater than 2)) of the plurality of radio waves receivable by said radio wave reception means and an intermediate frequency fi; a frequency conversion means which synthesizes the electric signal output from said

radio wave reception means with a harmonic component of the signal output from said oscillation means, and outputs the intermediate frequency signal;

The Smith reference however discloses wherein the oscillation signal is monitored in each frequency band, and the oscillation signal is calculated by taking the average of the incoming signals.

It would have been obvious to one of ordinary skill in the art to implement frequency-determining means based on the average of the multiple frequencies and take the value and implement the value to determine local oscillation frequency as disclosed by Smith with the combined radio reception device as disclosed by Bazarjani and Callaway.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Takashima reference (US 5,969,634) discloses a FM multiplexed broadcast receiving apparatus.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chan whose telephone number is (571) 272-0570. The examiner can normally be reached on Mon - Fri (9AM - 5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571)272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Chan
Art Division 2618
12/8/06

EDAN ORGAD
PATENT EXAMINER/TELECOMM.

12/9/06